OPERATING INSTRUCTIONS

for vinyl cutters

Secabo C30III, C60III and C120III

Congratulations on purchasing a Secabo vinyl cutter!

Please read these operating instructions thoroughly to ensure that you can start production with your vinyl cutter without problems.

Reproduction of these operating instructions in any form requires written approval of Secabo GmbH. We reserve all rights to change technical data and product features without prior notice. Not liable for printing errors.

Secabo GmbH does not assume any liability for direct or indirect damage or injury resulting from use of this product.

Version 3.1 (25.05.2010)

Table of Contents

1 Safety Precautions 2

2 Items Included 3

3 Layout of Stand-Up-Base 4

4 Unit Description 5
- 4.1 Unit Parts and Their Function 5
- 4.2 Side Views 5
- 4.3 Control Panel 6

5 Starting Up Appliance and Software 7
- 5.1 Installation Secabo FlexiStarter 7
  - 5.1.1 Version 8.6 with USB-Dongle 7
- 5.2 Connection via USB Interface 7
- 5.3 Connection via Serial Interface 8
  - 5.3.1 Be sure to check 8
- 5.4 Starting Up Appliance 9
- 5.5 Installing and Adjusting the Blade 9
- 5.6 Inserting the Blade Holder 10
- 5.7 Inserting cutting vinyl 10
- 5.8 Cutting Test 11

6 Settings and Operation 12
- 6.1 Online/Offline 12
- 6.2 Moving the Cutting Head 12
- 6.3 Setting the Zero Point 12
- 6.4 Changing 13
- 6.5 Repeat Function 13
- 6.6 Other Settings 14
- 6.7 Limit Switches 14

7 LAPOS (just C60III and C120III as of Model 11/08) 15
- 7.1 One-time Calibration of LAPOS 15
- 7.2 Application of LAPOS 21

8 Drag knifes 22

9 Technical Data 23

10 Troubleshooting 24

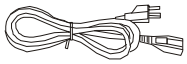
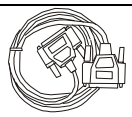
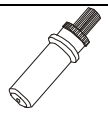
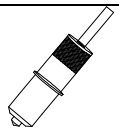
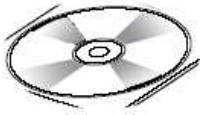
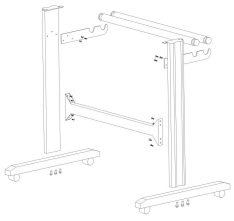
1 Safety Precautions

Please read these instructions and safety precautions carefully before using your vinyl cutter for the first time!

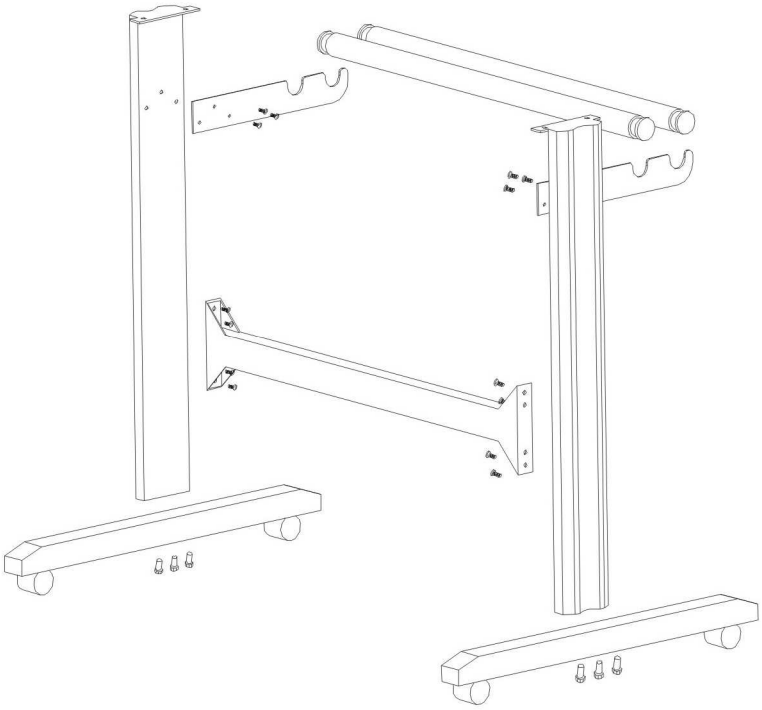
- Do not place any magnetic objects in the vicinity of the cutting head; otherwise uniform contact pressure is not ensured.
- Do not remove the connection cable to the computer while plotting is in progress.
- Relieve the pressure on the pressure rollers when not in use by moving the pressure lever up.
- Do not reach into the unit with your hands when the power is connected.
- Never open the housing or attempt to modify the unit yourself.
- In case you are requested by the Secabo customer support to open the heating plate cover, please make sure you are wearing respiratory protection and only touch the contained insulation wool with gloves. Any disposal of the wool must be contained in a closed bag.
- Ensure that liquids and metal objects do not get into the inside of the plotter.
- Ensure that the wall socket used is grounded and protected with a ground fault switch.
- Ensure that the connected voltage (220V) does not deviate by more than ±10%. Otherwise install a voltage stabilizer.
- Disconnect the power cord when the unit is not used for a longer period of time.
- Never reach into the unit in the vicinity of the blade holder during the cutting operation!
- Discontinue any printing jobs in progress before readjusting the blade holder!
- Always ensure that the vinyl cutter is out of reach of children during operation and never leave the unit or individual parts of it switched on without supervision.
- Do not touch the tip of the sliding blade to avoid injury.
- Always place the unit on a stable base to prevent it from falling down.
- Do not operate the unit during thunderstorms; it can be damaged or destroyed by lightning.

2 Items Included

Before starting work, please check whether the following items are all present:

Item	Quantity	
Power cable	1	
Serial connection cable	1	
USB connection cable	1	
Bladeholder	1	
Penholder	1	
45° drag knife	3	
Pens	2	
Secabo FlexiStarter	1	
Stand-up-base (not with C30III)	1	

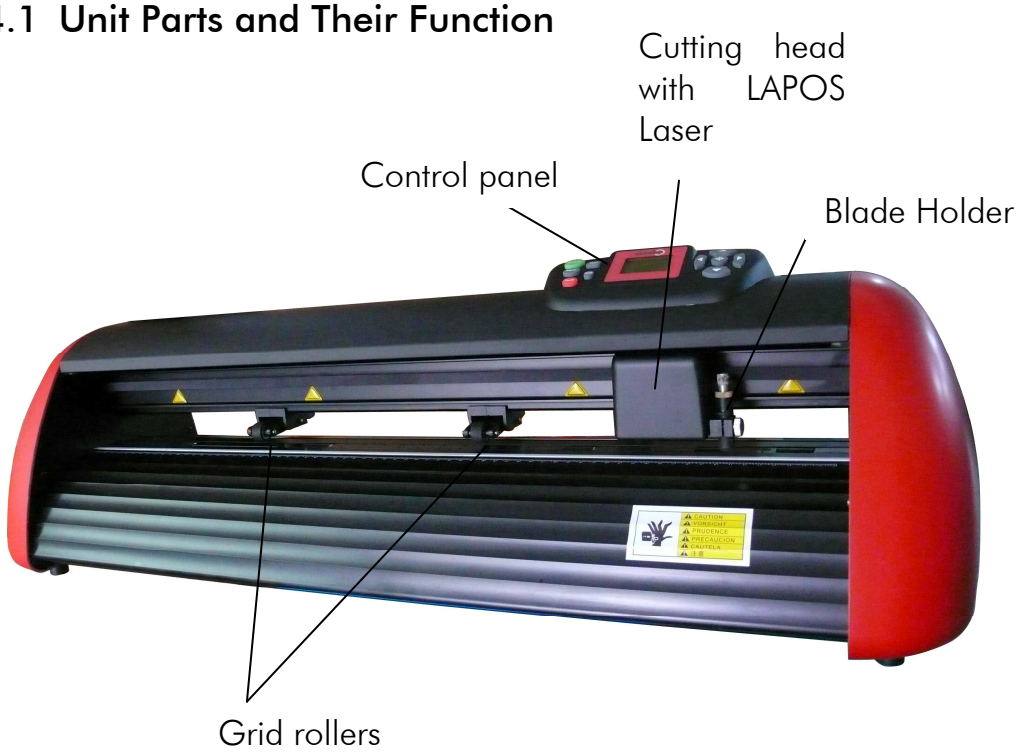
3 Layout of Stand-Up-Base



The stand-up base for your Secabo vinyl cutter can be assembled simply using the parts supplied as shown in the exploded drawing above.

4 Unit Description

4.1 Unit Parts and Their Function



4.2 Side Views

USB-port, serial port

Power supply, fuse, switch

4.3 Control Panel

a) Online-/Offline button
b) Test button (blade test)
c) LCD display
d) Arrow keys for control of cutting head and for pulling in vinyl
e) Zero point button
f) Pause button (to interrupt plotting operation)
g) Repeat button for repeating a job
h) Menu button for appliance settings

5 Starting Up Appliance and Software

Attention! Please note that you need to install FlexiStarter first to ensure a smooth installation and complete configuration of your Secabo vinyl cutter.

5.1 Installation Secabo FlexiStarter

Version 8.6 of the FlexiStarter cutting software with USB-dongle is supplied with your Secabo vinyl cutter. To control the vinyl cutter with your PC, install the software as described below:

5.1.1 Version 8.6 with USB-Dongle

- Plug the USB dongle (copy protection plug) supplied into the USB port (installation is accomplished automatically).
- Insert the *FlexiStarter* CD supplied.
- Select the *Desired Language* in Setup and click Continue.
- Enter your user ident and 32-digit password on the rear of the software cover.
- Start the installation program and select the desired language again.
- Read the software license agreement and accept.
- Set the check marks for the features *Flexi/Production Manager/Samples* and click *Continue*.
- The copy operation is started = Installation in progress.
- Click finish

5.2 Connection via USB Interface

Your Secabo vinyl cutter has a USB interface for connection between your PC and vinyl cutter.

Please note that your Secabo vinyl cutter can be operated only with Windows 2000 or Windows XP. Use with Windows 95 / 98 / Me is not possible.

The unit is equipped with a USB-RS232 adapter to ensure that your Secabo vinyl cutter also functions with cutting programs which can only control the peripheral devices over a serial or parallel interface. This installs a virtual serial interface on your PC under COM1 or COM2.

- Before connecting the vinyl cutter to your PC, first install the appropriate drivers from the driver CD provided by running the *SETUP.EXE* file. Click "Install".

- After installing, connect the vinyl cutter to the USB interface on your PC using the USB cable provided. Windows then indicates that new hardware components have been recognized and shows when the installation is completed.
- To determine the number assigned to the new interface, it is necessary to call the *Windows Device Manager*. For this purpose, click on *Workplace* with the right mouse key and select *Properties*. Then select the *Hardware* tab in the window which opens and click *Device Manger*. The serial and parallel interfaces on the computer are listed under the point *Connections,* including the *USB To Serial* connection. The interface number (e.g. COM1) indicated following the connection is the connection number to be used (e.g. in Artcut).
- If it is necessary to change the connection number, proceed as follows: Click the connection with the right mouse key and select *Properties*.
- Then click *Advanced* on the *Connection Settings* tab and enter the new number in the COM connection number field. This is required, for example, when using cutting programs such as Artcut, because Artcut can control vinyl cutters only over the COM1 or COM2 interface.

5.3 Connection via Serial Interface

No special installation is required when you connect your Secabo vinyl cutter to the hardware-side serial interface on your PC; it is only necessary to connect the plotter to the interface using the cable provided.

5.3.1 Be sure to check

Be sure to check the following settings before starting the first time:

- Open the FlexiStarter cutting software.
- Create your inscription or graphic and click *Cut/plot file*. In order to use Date from *CorelDraw*, the graphic must be exported from *CorelDraw* as EPS and can be opened in FlexiStarter via *File / Open*.
- Select your Secabo vinyl cutter (C30III, C60III or C120III).
- In the Production Manager go to *Settings / Job standard settings / cutting options*, knife offset and enter a value between 0,020cm and 0,033cm.
- Activate the overcut option with a value of 0,0254cm in the *File - Cut/Plot - Advanced* menu. If your vinyl cutter is controlled directly, please select local PC.
- Set the *flow control* to Xon/Xoff in the *properties* and set the *baud rate* to 38400. Set the baud rate both in the software and in the machine's menu. In version 8.5, you can select the baud rate and flow control in the production manager by clicking the knife symbol in the left area of the window.

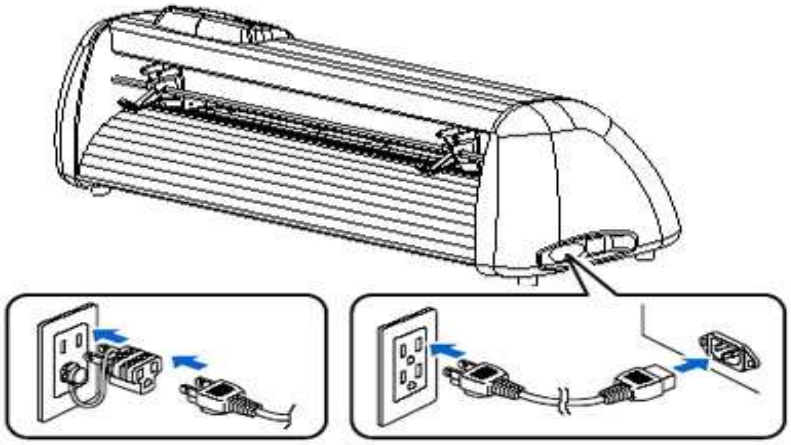
- In FlexiStarter under *Edit / Settings / Tools / Plotting and cutting*, remove the check mark in front of *Connect to local Production Manager over TCP/IP* (applies only for users on local PC).

CAUTION! These settings must be made before starting a plotting job; they do not become effective for plotting jobs already active!

5.4 Starting Up Appliance

Ensure that sufficient space is present for the vinyl transport in front of and in back of the unit. The vinyl cutter should be operated only in clean and dry surroundings.

- Connect the plotter to a 220 V wall socket with the power cable provided.



- Then switch the plotter on. Caution! After switching on, the cutting head initially moves to the right.

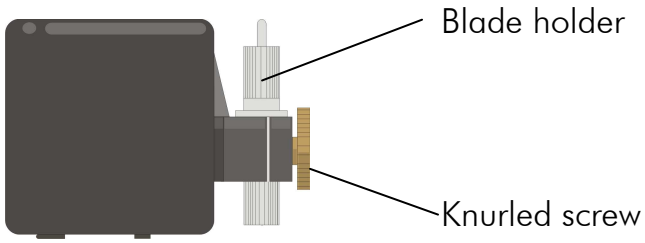
5.5 Installing and Adjusting the Blade

- Take one of the cutting blades supplied and place it in the blade holder so that the sharp side extends at the front. The blade is held by a magnet in the blade holder.
- Adjust the cutting depths by turning the front cap.
- The depth is initially set correctly when you can carefully move your fingertip across the blade and feel only a light scratching. Since the depth adjustment for the blade depends on the material, it may be necessary to change it later (as a rule 0.05 mm to 0.1 mm).
- Press the pin on the rear of the blade holder to remove and replace the blade at any time. Caution – Injury hazard!

The various material thicknesses require different blade settings or even special blades; it may therefore be necessary to repeat the adjustment described above.

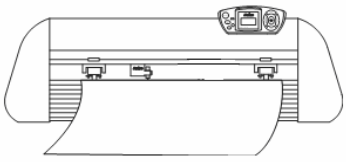
5.6 Inserting the Blade Holder

- First turn the clamping screw for the blade holder on the cutting head until it is open wide enough.
- Then insert the blade holder from the top and press down against the stop in the hole on the right side and retighten the clamping screw



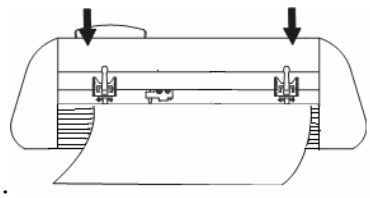
5.7 Inserting cutting vinyl

- Always insert the material to be printed into the unit from the rear.
- Pull the vinyl up to the cutting bar in order to correctly set the zero point. Details on setting the zero point are given under Point 6.3 in these instructions.
- If you use a roll of vinyl instead of vinyl sheets, the vinyl can be rolled off cleanly with the aid of the roll holder supplied.
- When inserting, ensure that the vinyl is inserted straight to prevent it from distorting during transport. When the vinyl is inserted at an angle of only a few millimeters, this can lead to the vinyl running highly off center during long plotting jobs.

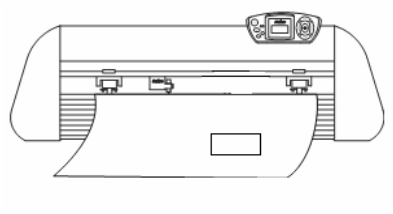


- You can insert the vinyl into the plotter at any desired point as long as the pressure rollers are located in the areas of the yellow arrows on the cross-member.

Mount the pinch rollers by switching the locking lever. Make sure the pinch rollers are located on the edges of the vinyl (about 2cm inward) to ensure the vinyl is tracking correctly and a maximum cutting area is ensured



5.8 Cutting Test

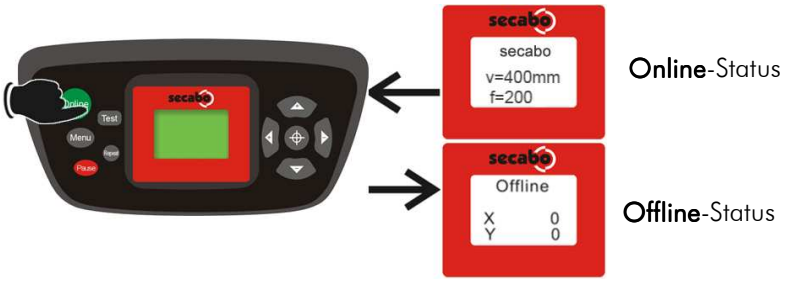


- To perform the cutting test in the offline mode, press the Test button; the plotter then cuts a rectangle in the inserted vinyl at the currently stored zero point.
- You can check the adjustment of the blade holder as well as the contact pressure with this cutting test. The material inserted should be cut cleanly and straight during the cutting test; the backing material should not be damaged.
- If the backing material has been cut through, either the contact pressure is set too high or the blade or blade holder is adjusted incorrectly. Change these adjustments and perform the cutting test again.
- Also readjust if the vinyl was cut imprecisely or to an insufficient depth.

6 Settings and Operation

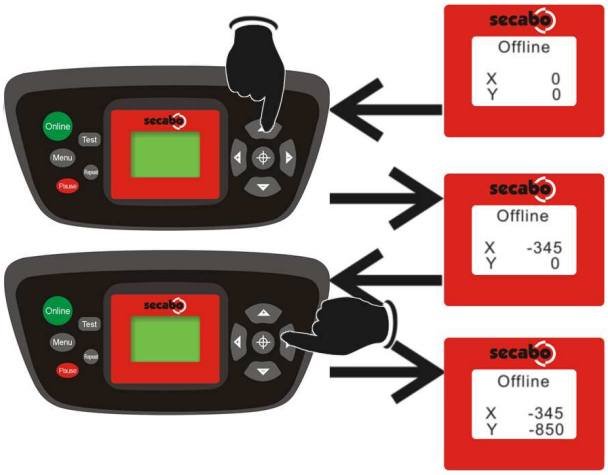
6.1 Online/Offline

After switching on the unit a reset is performed and the unit switches to the online mode. You can switch back and forth between the online and offline mode by pressing the Online button on the control panel. During the cutting operation, the vinyl cutter must generally be in the online mode, to change the configuration settings, the unit must be offline.



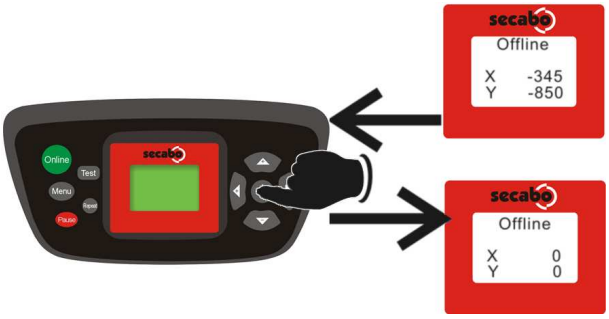
6.2 Moving the Cutting Head

In the offline mode, the cutting head can be moved to the right and left by pressing the arrow keys and the vinyl can be moved forwards and backwards. The corresponding X and Y coordinates are shown on the display.



6.3 Setting the Zero Point

Move the cutting head and vinyl so that the blade is at the front right corner of the vinyl to set the correct starting point for plotting. Then confirm this zero point by pressing the crosshair symbol in the middle of the control panel.



6.4 Changing

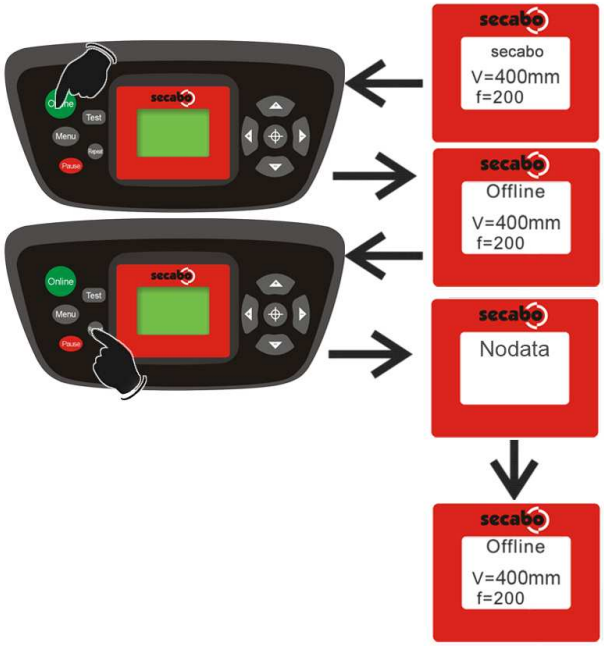
You can make the following changes in the online mode by pressing the corresponding buttons:

- + Increase speed
- - Reduce speed
- + Increase pressure
- - Reduce pressure

The cutting speed and contact pressure cannot be changed while a plotting job is in progress.

6.5 Repeat Function

After conclusion of a job it can be repeated without having to transfer the data from the computer again. For this purpose ensure that the vinyl cutter is in the offline mode and press the Repeat key.

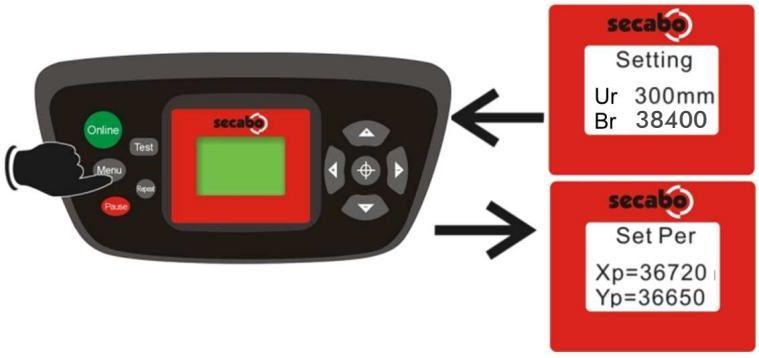


6.6 Other Settings

It is possible to scroll through other configuration menus in the offline mode by pressing the menu key a number of times.

In the settings menu it is possible to adjust the idle speed of the cutting head (Ur), as well as the Baud rate (Br). The Baud rate set must be identical with the Baud rate set on the computer. This value must be set to 38400.

The vinyl cutter can be calibrated correctly in the scaling menu (Set Per). Correction may be required here due to wear to the mechanical parts. The X and Y scaling of the data can be changed by changing the Xp and Yp values. If, for example, an object entered with a length of 100 cm on the computer is cut on the vinyl cutter to a length of only 98cm, it is necessary to correct the corresponding scaling value on the plotter.



Otherwise, these values should not be changed.

6.7 Limit Switches

If a plotting job is sent to the vinyl cutter accidentally which is larger than the maximum cutting width of the plotter, the cutting head is stopped automatically by a sensor at the left and right sides. In this case, the vinyl cutter is reset and it is necessary to transfer the job to the plotter again.

7 LAPOS (just C60III and C120III as of Model 11/08)

LAPOS is a system for positioning printable media in your CIII cutting plotter so that you can cut the printed elements in the designated contour without offset and free from distortion.

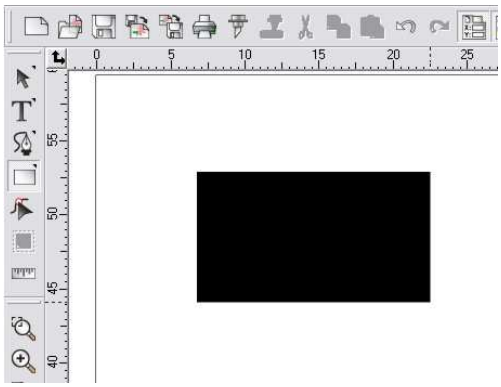
The installation as well as the application of LAPOS is explained in the following steps.

7.1 One-time Calibration of LAPOS

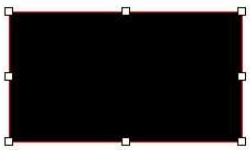
Before you can do the first contour cut you have to calibrate LAPOS once in connection with the FlexiStarter. This procedure is only to be repeated if you want to use your FlexiStarter on a new PC.

For calibrating LAPOS please take the following steps:

- Open up a new document in your FlexiStarter.
- Construct a rectangle, size optional, but the width should not exceed 15 cm.

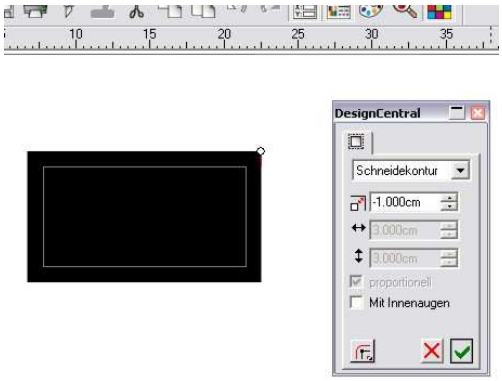


- While highlighting the rectangle choose the menu point “Effects“ – “Contour cutting“.

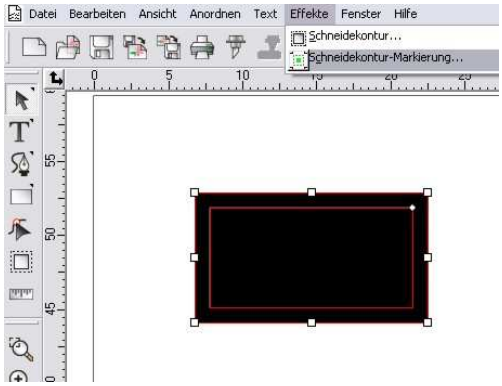


- In the appearing menu “DesignCentral“ you can now choose the position of the cutting contour. As a rule you will enter a negative value of , e. g. “-

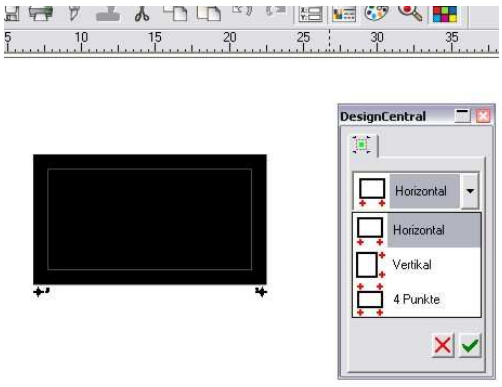
1mm“ so that the cut elements do not receive a white border later on. While calibrating it is best to use the value “0 mm“. Please confirm your entry by clicking the green check mark on the bottom right in the menu.



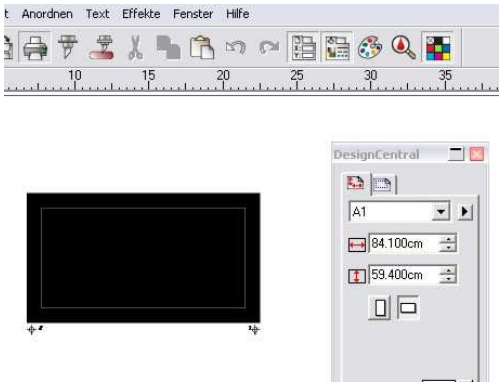
- Now choose the menu “Effects“ – “Contour cutting mark“.



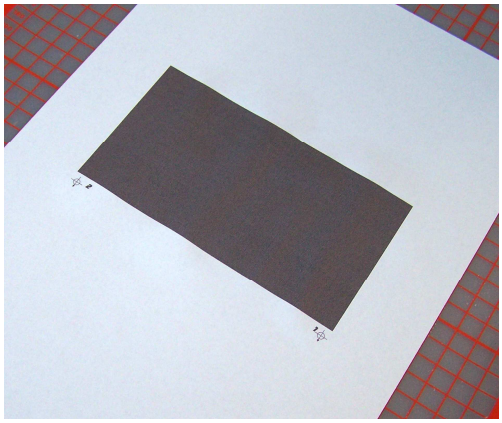
- Now you can choose whether two cutting marks horizontally or vertically shall be set. With small prints two marks are enough as they can be read in faster. With larger printed sheets 4 marks should be used to reach a higher accuracy. Please confirm your entry by clicking the green check mark on the bottom right of the menu.
  Attention! After the setting of the marks the object cannot be scaled anymore!

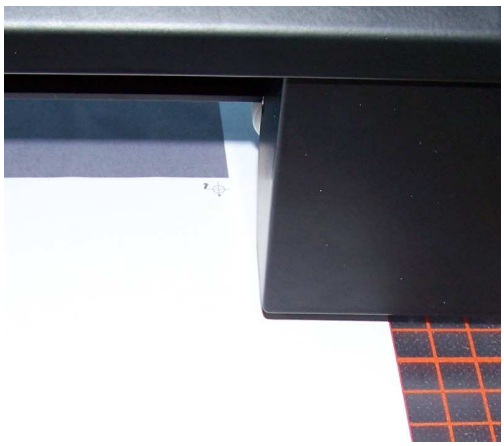


- Now please click on the printer symbol in the top menu to print the object according to the set marks with a printer of your choice. Please be careful that the print is not scaled by the printer driver.

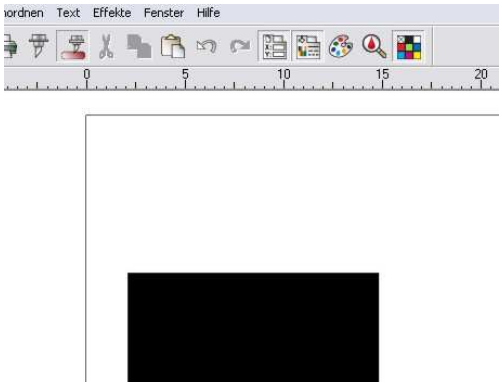


- Please place the print in the cutting plotter (if using paper its best on a plotting pad) so that the set marks are located on the left above the cutting head.

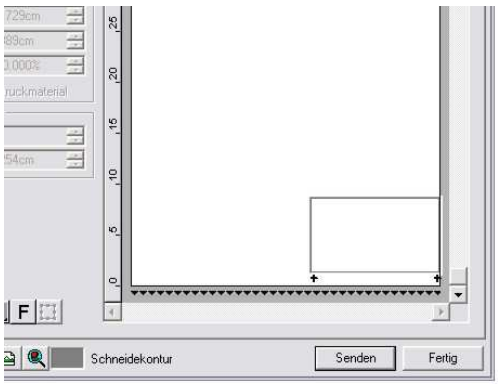




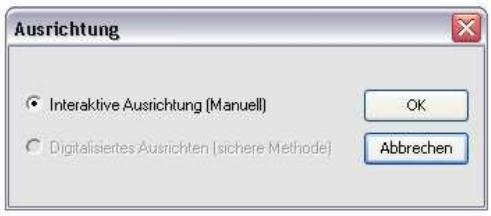
- Now choose the contour cutting function from the top menu.



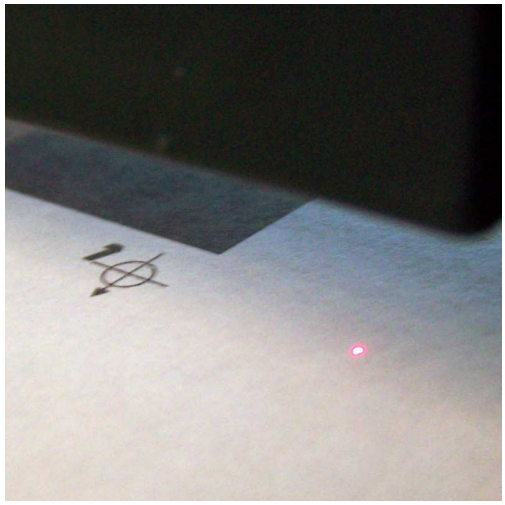
- In the following window click on “Send“.

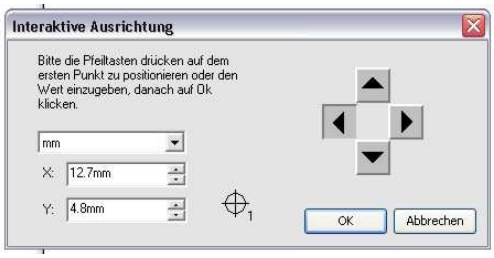


- Please confirm here with “OK“.

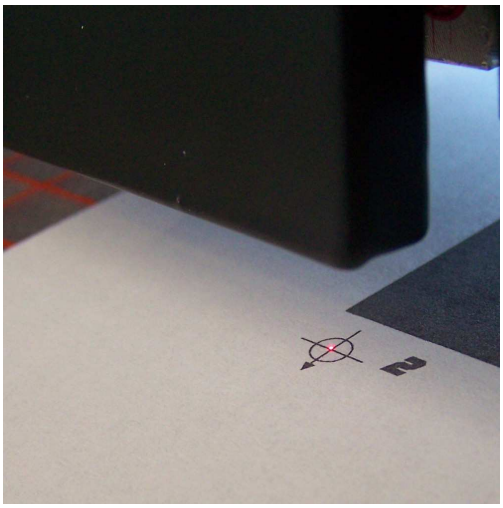


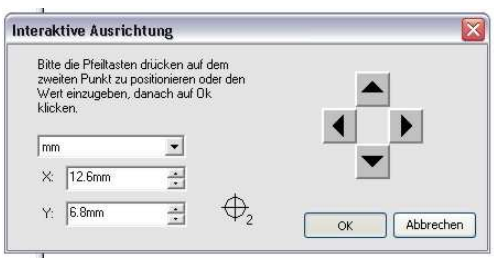
- A laser diode is now going to be activated on your Secabo cutting plotter. With help of the arrow keys lead this to the centre of the right cutting mark (No. “1”). Please note that you must push one of the arrow keys within several seconds to avoid the cutting plotter leaving the LAPOS modus automatically.





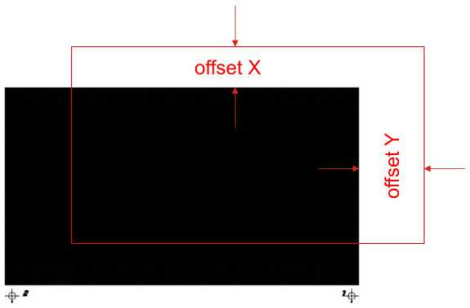
- When the laser is exactly in the middle of the cutting marks confirm with "Ok" and continue the procedure with the second cutting mark.



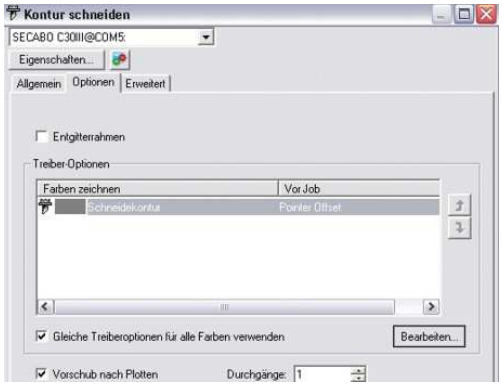


- As soon as you clicked “OK“ in the following window, the cutting plotter will begin to plot the contour (with a distinct offset). During the calibrating it is recommended to use a plot pen and to change to the cutting head at a later time.

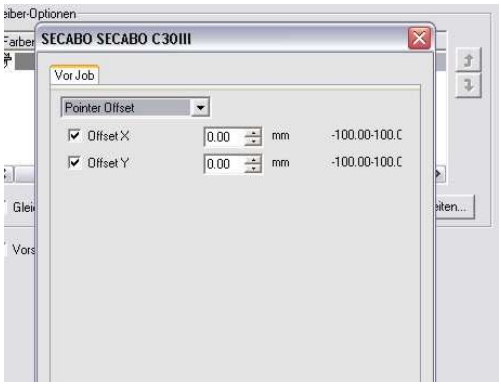
- Now remove the plot and measure the offset in both directions as shown in the following picture.



- Now you just have to enter the calculated offset in the corresponding menu in the FlexiStarter, so that the contours are always cut correctly. For this please click the “Options“ in the menu “Contour cutting“ and afterwards on “Edit“.



- Please enter “Offset X“ and “Offset Y“ into the fields. Please note that “Offset X“ has to be negative which means it has to be entered with a prefixed “-“. All values are to be entered in “mm“ and “.“ as separation marks.



- Now you can repeat the contour cut by repeating all steps starting off with „Send“ in the menu „Contour cutting”. Please look out for the offset values if applicable.

7.2 Application of LAPOS

- After the successful calibration you can use LAPOS by pursuing the steps in chapter 7.1 though, without measuring and entering the offset values again.
- Instead of the above used rectangle you can import any type of object and graphic into the FlexiStarter and cut them perfectly outlined.
- You normally now use the knife carrier with the cutting head in your cutting plotter.

8 Drag knifes

Drag knifes are sensitive, sharp and dangerous precision tools.

- Always keep the blades away from children!
- Exercise care when handling blades to prevent injuries.
- Treat the cutting blades carefully and always store them with the associated protective cap when not in use. If the tip of a blade hits against a hard material such as glass or stone, tiny chips can be broken out of the tip rendering the blade unusable.

Please observe the following notes to prevent unnecessary wear to your blades and achieve the maximum possible service life.

- Always avoid cutting into the backing material on the vinyl. The wear to the blades is increased when it is necessary for them to cut deeper into the material used.
- Adjust the cutting depth of the blade so that the material is just cut through cleanly. Further extension of the blade reduces its service life and does not improve the cutting results at all
- Use specially designed blades for thicker material (e.g. flock blades for flock).
- Ragged edges after cutting the vinyl indicate that the blade is dull. Always replace dull blades immediately!

9 Technical Data

Model	C30III	C60III	C120III
Type	Desktop unit	Unit including stand-up base and LAPOS	Unit including stand-up base and LAPOS
Max. medium width	415mm	720mm	1300mm
Max. cutting width	305mm	610mm	1220mm
Connections	RS232C, USB		
Display	Back-lighted, 4-line LCD display		
Plotter languages	HP-GL, DMPL		
Memory	Unit has 1MB internal memory		
Max. speed	600mm/s		
Max. medium thickness	1mm		
Contact pressure	50g – 500g		
Mechanical resolution	0.025mm		
Repetition accuracy	< ± 0.1mm		
Power supply	90V AC – 240V AC/ 50Hz – 60Hz		
Ambient conditions	+ 5C - +35C / 30% - 70% humidity		
Weight without packing	9kg	12kg	18kg
Weight with packing	11kg	16kg	39kg
Dimensions (W x H x D)	585mm x 265mm x 270mm	890mm x 265mm x 270mm	1465mm x 265mm x 270mm

10 Troubleshooting

The cutting plotter can no longer be accessed after a Windows update

Possible causes:

Windows regularly updates existing device drivers on your computer. During this process, the Secabo driver is replaced by a seemingly newer version which does not work.

To manually undo this update, right-click *My Computer* and select *Properties*.

You are now in the *System Properties* window. Select the *Hardware* tab and then *Device Manager*. Under *Ports (COM & LPT),* select your device (e.g. CH341 or USB to serial, etc.) by double-clicking.

You are now in the *Properties* of the connection. From within this window, select the *Driver* tab then *Update Driver* and insert the driver CD into your CD drive. Select the source of the driver to be installed (CD drive) and perform the update. Then restart the PC to apply all settings.

Vinyl cutter terminates job with Pause on display and does not react when buttons are pressed.

In this case, it is necessary to restart the vinyl cutter to eliminate the error.

Possible causes:

- Job transferred in wrong format (too large).
- Settings changed during transfer operation.
- Plotter set to pause during plotting operation to change contact pressure or speed.

Jobs are always output too large:

Possible causes:

- Resolution incorrectly adjusted (increments in mm)
- Output size greater than 100%.

An imported job (EPS) is plotted a number of times at the same position.

Possible causes:

File may be corrupted and should be checked.

Straight lines are cut zigzag

Possible causes:

Blade adjustment and/or contact pressure incorrect and should be checked.

Curves are not cut properlay

Possible causes:

The curve quality setting in the job standard settings in the production manager is not set to high.

Konformitätserklärung
Statement of Conformity

Hiermit erklären wir in alleiniger Verantwortung, dass das unter „9. Technische Daten“ genannte Produkt mit den Bestimmungen der folgenden EG-Richtlinien und Normen übereinstimmt:
We herewith declare under sole responsibility that the under „9. technical data“ mentioned product meet the provisions of the following EC Directives and Harmonized Standards:

EG-Richtlinien / EC Directives:

2006/95/EG Niederspannungsrichtlinie

2006/95/EC Low Volatge Directive

98/37/EG Maschinenrichtlinie (2006/42/EG ab 29.12.2009)

98/37/EC Directive on machinery (from 2009-12-29: 2006/42/EC)

Norm / Standard:

EN 60204-1:2006

Technische Dokumente bei / Technical documents at:

Secabo GmbH, Hochstatt 6-8, 85283 Wolnzach, Germany

Dipl. Ing. Fabian Franke

Dipl. Ing.(FH) Bernhard Schmidt